

in brackets.

*1. Please replace claim 1 with amended claim 1:*

*B' Sub C'* 1.  
A chimeric peptide comprising an N-terminal opioid receptor binding moiety and a C-terminal Substance P receptor agonist binding moiety.

*2. Please cancel claims 3-23 and add the following new claims:*

- B2*
24. The peptide of claim 1 wherein said opioid receptor binding moiety binds to at least one opioid receptor selected from the group consisting of the  $\mu$  receptor, the  $\delta$  receptor and the  $\kappa$  receptor.
25. The peptide of claim 24 wherein said opioid receptor binding moiety comprises a ligand, N-terminal fragment or N-terminal derivative thereof, which ligand binds to at least one opioid receptor selected from the group consisting of the  $\mu$  receptor, the  $\delta$  receptor and the  $\kappa$  receptor.
26. The peptide of claim 1, 24 or 25 wherein said opioid receptor binding moiety is an opioid receptor agonist.

27. The peptide of claim 1, 24 or 25 wherein said opioid receptor binding moiety selectively binds the  $\mu$  receptor.
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- See C2* 28. The peptide of claim 27 wherein said opioid receptor binding moiety is a  $\mu$  receptor agonist.
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29. The peptide of claim 28 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine.

30. The peptide of claim 29 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr.
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- See B2 C3 Cont* 31. The peptide of claim 30 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 1-11, N-terminal fragments and N-terminal derivatives thereof.

32. The peptide of claim 30 wherein said opioid receptor binding moiety is endomorphin 1, endomorphin 2, an N-terminal fragment or N-terminal derivative thereof.

33. The peptide of claim 32 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 2-3, N-terminal fragments and N-terminal derivatives thereof.
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34. The peptide of claim 1, 24 or 25 wherein said opioid receptor binding moiety selectively binds the  $\delta$  receptor.
35. The peptide of claim 34 wherein said opioid receptor binding moiety is a  $\delta$  receptor agonist.
36. The peptide of claim 35 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine.
37. The peptide of claim 36 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr.
38. The peptide of claim 37 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 12-17, N-terminal fragments and N-terminal derivatives thereof.
39. The peptide of claim 1, 24 or 25 wherein said opioid receptor binding moiety selectively binds the  $\kappa$  receptor.

B<sup>2</sup>  
Cont.

40. The peptide of claim 39 wherein said opioid receptor binding moiety is a  $\kappa$  receptor agonist.
41. The peptide of claim 40 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine:
42. The peptide of claim 41 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr
43. The peptide of claim 42 wherein said opioid receptor binding moiety is a dynorphin peptide, N-terminal fragment or N-terminal derivative thereof.
44. The peptide of claim 43 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 18-20 and 44, N-terminal fragments and N-terminal derivatives thereof.

B2  
Cont.

45. The peptide of claim 1, 24 or 25 wherein said Substance P receptor agonist binding moiety comprises Substance P, a C-terminal Substance P fragment or a C-terminal Substance P derivative.
46. The peptide of claim 1, 24 or 25 wherein the -COOH moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is protected.

Sub  
C4

47. The peptide of claim 46 wherein the  $\text{-COOH}$  moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is amidated.
48. The peptide of claim 47 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is  $\text{Met-NH}_2$ .

- See S* 49. The peptide of claim 48 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 21, 36 and 38-41, N-terminal fragments and N-terminal derivatives thereof.

- B2 Cont.* 50. The peptide of claim 46 wherein the  $\text{-COOH}$  moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is esterified.
51. The peptide of claim 50 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is a methyl ester.
52. The peptide of claim 51 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is Gly-OMe, Lys-COOMe or Arg-COOMe.

- Sub C6*
53. The peptide of claim 52 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 25-27, N-terminal fragments and N-terminal derivatives thereof.

54. The peptide of claim 50 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is an ethyl ester.

55. The peptide of claim 54 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is Gly-COOEt, Lys-COOEt or Arg-COOEt.

- Sub C1*
56. The peptide of claim 55 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 28-30, N-terminal fragments and N-terminal derivatives thereof.

- B2 Cont.*
57. The peptide of claim 1 wherein the opioid receptor binding moiety is selected from the group consisting of endomorphin 1, endomorphin 2, N-terminal fragments and N-terminal derivatives thereof; and the Substance P receptor binding moiety is selected from the group consisting of Substance P, C-terminal fragments and C-terminal derivatives thereof.

58. The chimeric peptide of claim 1 wherein the peptide has SEQ ID No: 42.

59. The chimeric peptide of claim 1 wherein the peptide has SEQ ID No: 43.

60. The peptide of claim 1, wherein said peptide comprises at least one non-natural amino acid.

*See C8*  
61. The peptide of claim 60 wherein said peptide comprises at least one D-amino acid.

62. A pharmaceutical composition comprising the peptide of claim 1 and a pharmaceutically acceptable diluent.

63. The pharmaceutical composition of claim 62, further comprising an adjuvant.

*See B2 Cont. C9*  
64. The composition of claim 62, wherein said peptide induces analgesia when administered to a mammal.

65. The composition of claim 62 wherein said opioid receptor binding moiety binds to at least one opioid receptor selected from the group consisting of the  $\mu$  receptor, the  $\delta$  receptor and the  $\kappa$  receptor.

66. The composition of claim 62 wherein said opioid receptor binding moiety comprises a ligand, N-terminal fragment or N-terminal derivative thereof, which ligand binds to at

least one opioid receptor selected from the group consisting of the  $\mu$  receptor, the  $\delta$  receptor and the  $\kappa$  receptor.

67. The composition of claim 62, 65 or 66 wherein said opioid receptor binding moiety is an opioid receptor agonist.

68. The composition of claim 62, 65 or 66 wherein said opioid receptor binding moiety selectively binds the  $\mu$  receptor.

*See  
C10*  
69. The composition of claim 68 wherein said opioid receptor binding moiety is a  $\mu$  receptor agonist.

*B2  
Cont.*  
70. The composition of claim 69 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine.

71. The composition of claim 70 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr.

72. The composition of claim 71 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 1-11, N-terminal fragments and N-terminal derivatives thereof.



73. The composition of claim 71 wherein said opioid receptor binding moiety is endomorphin 1, endomorphin 2, an N-terminal fragment or N-terminal derivative thereof.

*Sub C10*  
74. The composition of claim 73 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 2-3, N-terminal fragments and N-terminal derivatives thereof.

75. The composition of claim 62, 65 or 66 wherein said opioid receptor binding moiety selectively binds the  $\delta$  receptor.

76. The composition of claim 75 wherein said opioid receptor binding moiety is a  $\delta$  receptor agonist.

*B2 Cont.*  
77. The composition of claim 76 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine.

78. The composition of claim 77 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr.

79. The composition of claim 78 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 12-17, N-terminal fragments and N-terminal derivatives thereof.

80. The composition of claim 62, 65 or 66 wherein said opioid receptor binding moiety selectively binds the  $\kappa$  receptor.
81. The composition of claim 80 wherein said opioid receptor binding moiety is a  $\kappa$  receptor agonist.
82. The composition of claim 81 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is a free amine.
83. The composition of claim 82 wherein the N-terminal amino acid residue of said opioid receptor binding moiety is Tyr.
84. The composition of claim 83 wherein said opioid receptor binding moiety is a dynorphin peptide, N-terminal fragment or N-terminal derivative thereof.
85. The composition of claim 84 wherein said opioid receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 18-20 and 44, N-terminal fragments and N-terminal derivatives thereof.

86. The composition of claim 62, 65 or 66 wherein said Substance P receptor agonist binding moiety comprises Substance P, a C-terminal Substance P fragment or a C-terminal Substance P derivative.

87. The composition of claim 62, 65 or 66 wherein the -COOH moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is protected.

88. The composition of claim 87 wherein the -COOH moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is amidated.

89. The composition of claim 88 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is Met-NH<sub>2</sub>.

90. The composition of claim 89 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 21, 36 and 38-41, N-terminal fragments and N-terminal derivatives thereof.

91. The composition of claim 87 wherein the -COOH moiety of the C-terminal amino acid residue of said Substance P receptor binding moiety is esterified.

92. The composition of claim 91 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is a methyl ester.

93. The composition of claim 92 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is Gly-OMe, Lys-COOMe or Arg-COOMe.
94. The composition of claim 93 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 25-27, N-terminal fragments and N-terminal derivatives thereof.
95. The composition of claim 91 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is an ethyl ester.
96. The composition of claim 95 wherein the C-terminal amino acid residue of said Substance P receptor binding moiety is Gly-COOEt, Lys-COOEt or Arg-COOEt.
97. The composition of claim 96 wherein said Substance P receptor binding moiety is selected from the group consisting of peptides having SEQ ID Nos: 28-30, N-terminal fragments and N-terminal derivatives thereof.
98. The composition of claim 62 wherein the opioid receptor binding moiety is selected from the group consisting of endomorphin 1, endomorphin 2, N-terminal fragments and N-terminal derivatives thereof; and the Substance P receptor binding moiety is selected

from the group consisting of Substance P, C-terminal fragments and C-terminal derivatives thereof

99. The composition of claim 62 wherein the peptide has SEQ ID No: 42.

100. The composition of claim 62 wherein the peptide has SEQ ID No: 43.

101. The composition of claim 62, wherein said peptide comprises at least one non-natural amino acid.

102. The composition of claim 101 wherein said peptide comprises at least one D-amino acid.

#### REMARKS

Claims 1-17, drawn to a chimeric peptide in which the opioid receptor binding moiety is a  $\mu$  opioid receptor agonist, and a pharmaceutical composition, were elected in response to a Restriction Requirement dated December 14, 2000. To provide a clear record, Applicant hereby confirms that the election was made without traverse. However, Applicant explicitly reserves the right to pursue any of the non-elected claims in continuing or divisional applications. Accordingly, claims 1-17 are currently pending in the subject application. The Examiner rejected all of the pending claims for being obvious over Kream *et al.* in combination with